



# *Teacher Survey Analysis*

*Prepared for  
Education Webpage Team*

*by  
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## *Executive Summary*

As part of the work in establishing a FETC education website, the Educational Website Team conducted a survey of teachers in the surrounding areas of both the Morgantown and Pittsburgh sites. We conducted the survey to learn how teachers were using the Internet to augment their classroom instruction and to find out what they liked with Internet resources. The team hoped to learn from this survey in the hopes of improving the existing webpage that is currently part of the FETC website.

Seventy-four surveys were received and this report summarizes the results of that survey. The findings from the survey are:

- Many teachers are using the Internet to augment their educational materials. It also appears from the responses that they will be using the Internet more in the future as they gain more access, attend more training, and find more useful educational resources on the Internet.
- One-third of the teachers surveyed had their own access to the Internet. About 70% of the teachers used the Internet at least 1-3 times each week for educational purposes.
- Those teachers who are using the Internet are using the most common tools available: E-mail and WWW. The Internet was used most to augment science education.
- As for important features of an education website, teachers felt that usefulness of the information (quality, content) was the most important feature, seconded by the ease of use (loads quickly and layout). Teachers cited the following websites as good examples of education websites: NASA, National Geographic, Channel One News, and The Discovery Channel.
- When asked what they would like to see on an environment/energy education website, teachers surveyed said they would like references, chat with a scientist, and related links.

FETC can use this information to make improvements to the existing education Webpage by doing the following:

- ensure that the Webpage contains information to teachers that they will find useful in the classroom and in their preparation for teaching.
- ensure that the Webpage is designed to have a layout that is easy to use, but also loads quickly.
- setting up the ability to chat with a scientist would be considered useful to teachers.
- have related educational lists of links that will help teachers to get additional information.
- review the suggested websites to look for features considered helpful to teachers.

Besides the above, FETC may also want to consider other ideas such as:

- providing training for teachers on using the Internet for educational purposes
- providing computer equipment to school systems and perhaps advice and consultation on setting up Internet access.

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# 1

## *Introduction*

The Education Webpage Team, hereafter referred to as “the Team” is working on developing an educational Webpage for the Federal Energy Technology Center. The page has been deployed, however, the Team continues to make improvements to the content and presentation of the page. The audience for this Webpage is both students and teachers.

## *The Survey*

As part of this continuing improvement, the Team decided to conduct a survey of teachers in the Monongalia and Allegheny county area schools to find out what would be helpful to teachers and students. The survey used is shown in Appendix A.

Specifically, the team was looking for the following information:

- Internet tools that were used the most
- types of computer equipment that were being used by teachers
- websites that were being used by teachers for their own resources and for the students
- what features the teachers are looking for in a good education webpage
- frequency of use by teachers
- types of Internet connections that were being used

In addition to the above questions, teachers were asked for demographic information such as their name, school, address, e-mail address, grades taught, school webpage address.

## *The Analysis*

The teacher surveys were entered into a database and the results analyzed to find trends that would be helpful to the team in improving the website. The tools used for this analysis were the Microsoft Access 2.0 database software and Microsoft Excel 5.0 spreadsheet software.

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# 2

## Results of Survey

The following are the results of the teacher surveys. Each section details a particular area surveyed. A total of 74 surveys was completed; however, not all of the information in each survey was completed by the teachers. This was mainly due to lack of information regarding computer equipment or specific information such as webpage addresses.

### Type of Internet Access

Teachers were asked why types of Internet access that were using. The possible answers were:

- ☐ school, classroom
- ☐ school, nonclassroom (such as the library or computer lab)
- ☐ personal account
- ☐ public library
- ☐ no access
- ☐ other

The results shown in Figure 1 show that 12% of the teachers surveyed did not have any access the Internet. A total of 48% had access either in the classroom or somewhere in the school or both. Thirty-three percent have their own Internet account.

Respondents were asked for reasons they do not use the Internet or why they do not have access. The number one cited reasons was lack of funding followed by statements that access would be installed in 1998. Other reasons were lack of training, lack of support from the school administration and lack of adequate equipment to connect to the Internet.

**Question 1: Access to Internet**

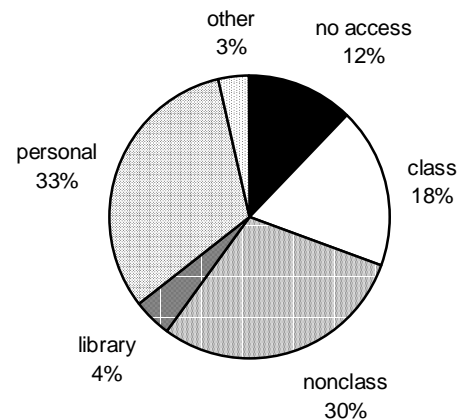


Figure 1: Access to Internet

## Internet Services Used

The teachers were asked what types of Internet services they regularly used. The choices were:

- ☐ E-mail
- ☐ World Wide Web
- ☐ News Groups
- ☐ Video
- ☐ File Transfer Protocol (FTP)
- ☐ Gopher
- ☐ Chat
- ☐ Sound
- ☐ Other

**Question 2: Internet Tool Use**

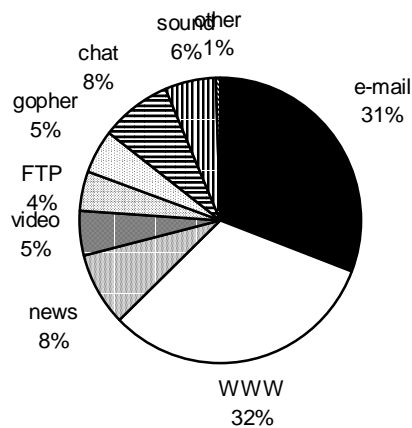


Figure 2: Types of Tools Used

Figure 2 shows that by far the most used tools were e-mail and the World Wide Web. The remaining tools were rarely used at all.

## Use of Internet for Teaching Resources

Teachers were asked if they used the Internet for teaching resources and if so what subjects. The choices were:

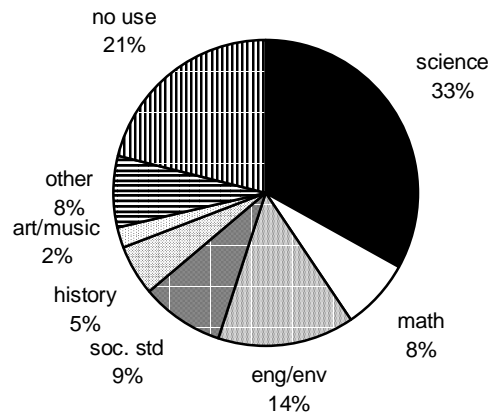
- ☐ Science
- ☐ Math
- ☐ Environment/Energy
- ☐ Social Studies
- ☐ History
- ☐ Art/Music
- ☐ Other

Figure 3 shows that 21% of the teachers did not use the Internet as a personal resource. The remaining 79% said that they did use the Internet for their teaching resources with it mostly being use for science and energy/environmental information. These responses may have been skewed because many teachers who were given the survey were science and mathematics teachers.

Other subjects that the Internet was used for included: weather, career information, language arts, computer programming, and seasonal projects.

The teachers were also asked what websites they used frequently for their teaching resources. The NASA website was listed as the most frequently used webpage (mentioned four times). Others sites were only mentioned once. A completed list is in Appendix B.

**Question 3: Teaching Resources**



**Figure 3: Use for Teaching Resources**

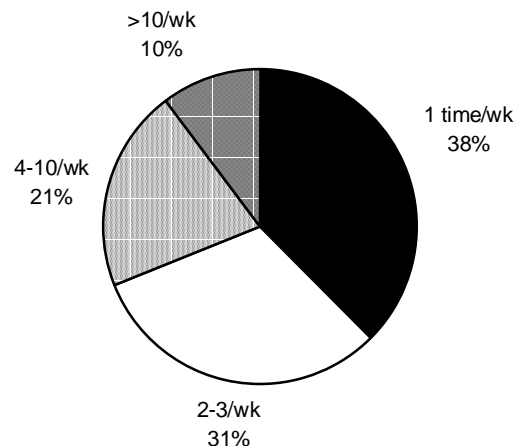
## *Use of the Internet in the Classroom*

Teachers were asked if they used the Internet in their classroom and if so what websites did they use most frequently. Seventy-five percent did not use the Internet in their classroom. This may have been mainly because they did not have classroom access. The websites that were used included: NASA, various search engines (Alta Vista, Yahoo), Discovery Channel, CNN, and Weather Channel. Appendix C lists all of the sites from the survey.

## *Frequency of the Use*

Teachers were asked how often they use the Internet for teaching purposes. Figure 4 shows that most teachers used the Internet at least 1 time/week, 31% used it 2-3 times/week, 21% used the Internet 4-10 times per week, and the remaining 10% were heavier users accessing more than 10 times per week.

**Question 5: Frequency of Use**



**Figure 4: Frequency of Use by Teachers**

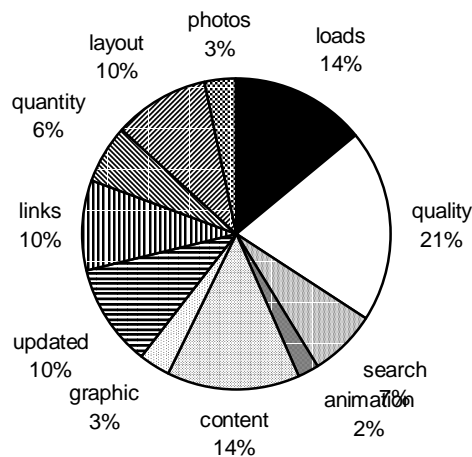
## Important Features of WebPage

Teachers were asked to choose four features of a webpage that were important to them. The choices were:

- |   |  |
|---|--|
| <input type="checkbox"/> Loads quickly          | <input type="checkbox"/> Updated frequently      |
| <input type="checkbox"/> Quality of information | <input type="checkbox"/> List of related links   |
| <input type="checkbox"/> Searching capabilities | <input type="checkbox"/> Quantity of information |
| <input type="checkbox"/> Animation/sound/video  | <input type="checkbox"/> Layout and ease of use  |
| <input type="checkbox"/> Content                | <input type="checkbox"/> Photographs             |
| <input type="checkbox"/> Graphics               |  |

### Question 6: Important Features of Website

Figure 5 shows that the most important features were:



1. Quality of information (21%)
2. Content (14%)
3. Loads quickly (14%)
4. Updated frequently (10%)
5. Layout and ease of use (10%)
6. List of related links (10%)

Figure 5: Most Important Features of Webpage

## Examples of Good Educational WebPages

Teachers were asked for examples of good education webpages. The answers included: NASA, National Geographic, Channel One News, Discovery Channel. The complete list is shown in Appendix D.

## Education Items for an Environment/Energy Educational Webpage

Teachers were asked what items they would expect to see on an environment/energy educational webpage. The available choices were:

- |   |  |
|---|--|
| <input type="checkbox"/> Games            | <input type="checkbox"/> Related links         |
| <input type="checkbox"/> References       | <input type="checkbox"/> Chat with a Scientist |
| <input type="checkbox"/> E-mail questions | <input type="checkbox"/> Animation/sound/video |
| <input type="checkbox"/> Other            |  |



### Question 8: Features of Energy/Environment Website

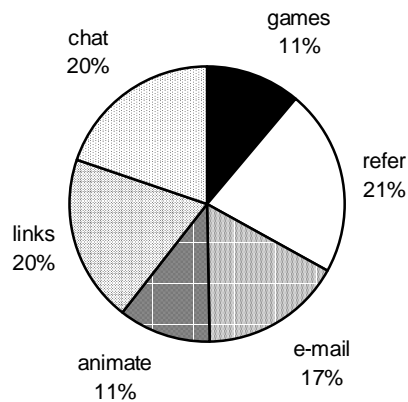


Figure 6: Items Wanted on WebPage

Figure 6 shows that the top items that teachers would like to see are:

1. References (21%)
2. Chat with a scientist (20%)
3. Related links (20%)

### *Types of Computer Equipment Used*

Teachers were asked what types of computer equipment they used. This was asked to get a sense for the power of the computer equipment that was available in the schools. This affects how we might want to design the web page in terms of complexity.

The survey asked about the type of processor, the speed, memory, and the type of connection used. Figures 7 through 10 show the profile of the equipment. The results are shown in descending order of responses. NA indicates that No Answer was given to that particular question. About 60% of the respondents did not give information to this question that showed that they were not familiar with the type of equipment that they were using or did not have access to any computer equipment.

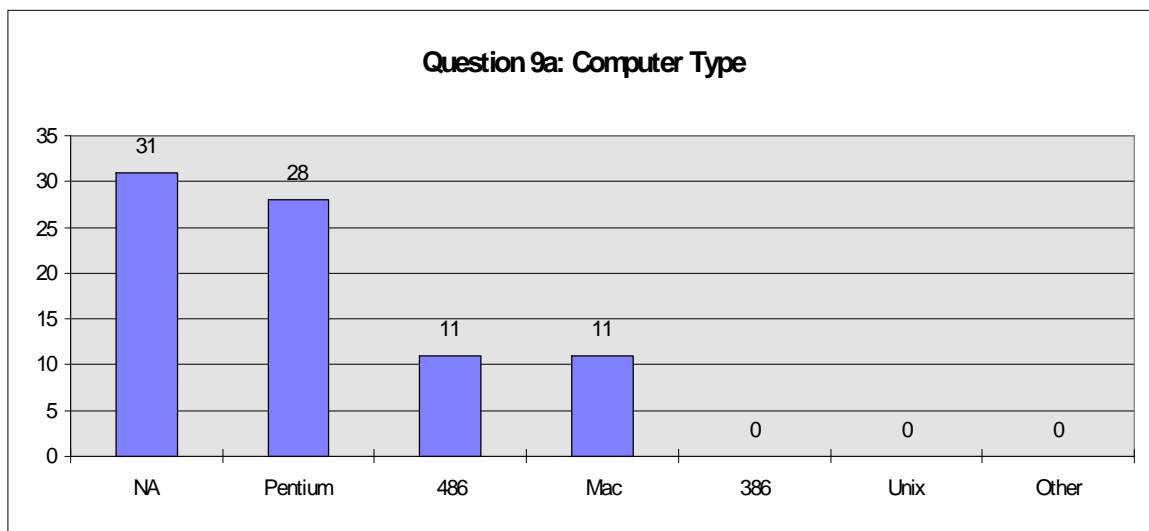


Figure 7: Type of Processor

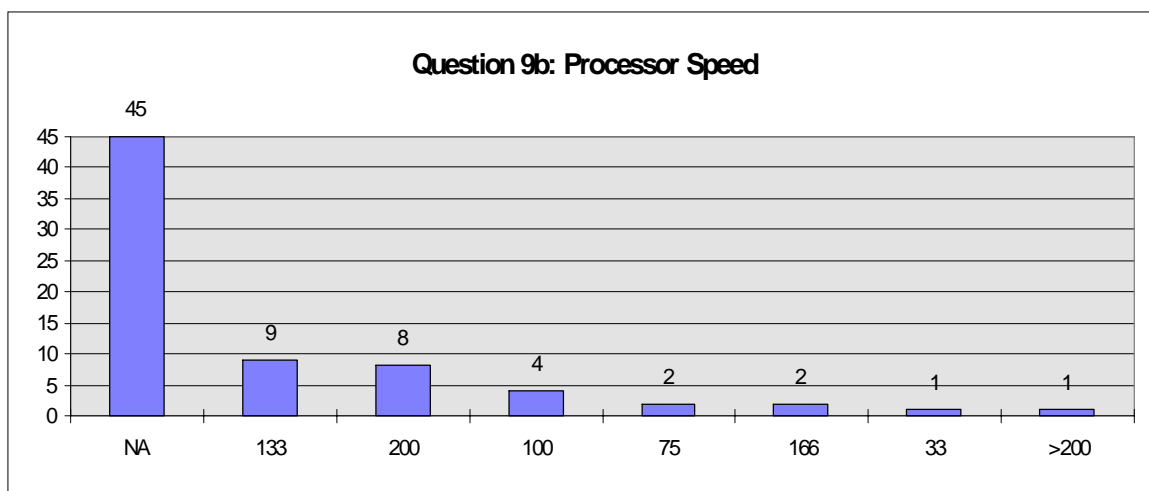


Figure 8: Processor Speed

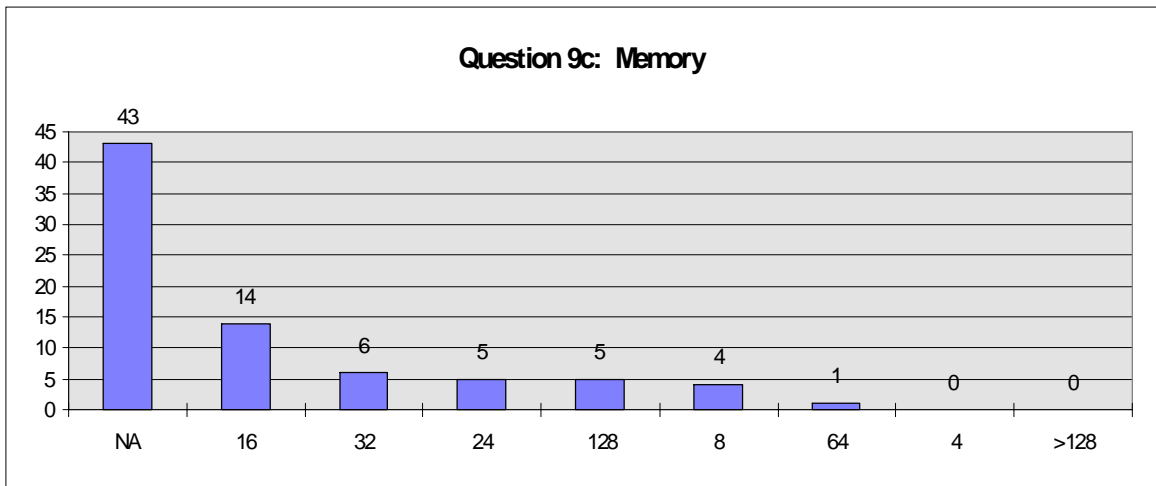


Figure 9: Memory

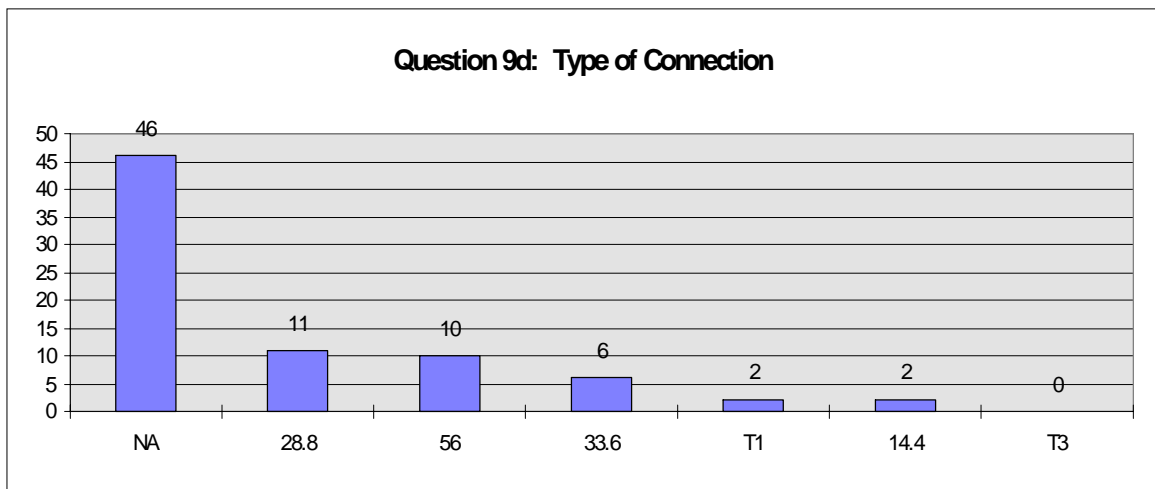


Figure 10: Type of Connection

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# 3

## *Conclusions and Recommendations*

### *Conclusions*

It is clear from this survey that many teachers are using the Internet in some capacity to augment their educational materials, either in direct use within the classroom or as a resource to their preparatory materials. It also appears from the responses that they will be using the Internet more in the future as they gain more access, attend more training, and find more useful educational resources on the Internet.

One-third of the teachers surveyed had their own access to the Internet. About 70% of the teachers used the Internet at least 1-3 times each week for educational purposes.

Those teachers who are using the Internet are using the most common tools available: e-mail and WWW. The Internet was used most to augment science education. This may be somewhat skewed because most of the teachers surveyed were science/math teachers.

As for important features of an education website, teachers felt that usefulness of the information (quality, content) was the most important feature, seconded by the ease of use (loads quickly and layout). When asked what they considered good examples of education websites, teachers responded with NASA, National Geographic, Channel One News, and the Discovery Channel.

When asked what they would like to see on an environment/energy education website, teachers surveyed said they would like references, chat with a scientist, and related links.

As for computer equipment those teachers with access seem to have adequate equipment and connections to access the Internet.

### *Recommendations*

FETC can use this information to make improvements to the existing education webpage by doing the following:

- ✓ ensure that the webpage contains information to teachers that they will find useful in the classroom and in their preparation for teaching.

- ✓ ensure that the webpage is designed to have a layout that is easy to use, but also loads quickly.
- ✓ setting up the ability to chat with a scientist would be considered useful to teachers.
- ✓ have related educational lists of links that will help teachers to get additional information.
- ✓ review the suggested websites to look for features considered helpful to teachers.

In addition to the above, FETC may also want to consider other ideas such as:

- ✓ providing training for teachers on using the Internet for educational purposes
- ✓ providing computer equipment to school systems and perhaps advice and consultation on setting up Internet access.

## ***FETC Education WebPage Teacher Survey***

Name: \_\_\_\_\_

School: \_\_\_\_\_

Grade: \_\_\_\_\_

Website URL: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

1. What Internet access do you have or use either in your school or personally? Check all that apply:

- ☐ school classroom
- ☐ school nonclassroom
- ☐ personal account at home
- ☐ public library
- ☐ no access
- ☐ other \_\_\_\_\_

If you do not have access, please explain why (lack of funding, inadequate or not equipment, lack of training, time, etc.)

2. What Internet services do you use? Check all that apply.

- |   |   |
|---|---|
| <input type="checkbox"/> E-mail         | <input type="checkbox"/> File Transfer Protocol |
| <input type="checkbox"/> World Wide Web | <input type="checkbox"/> Gopher                 |
| <input type="checkbox"/> News Groups    | <input type="checkbox"/> Chat                   |
| <input type="checkbox"/> Video          | <input type="checkbox"/> Sound                  |
| <input type="checkbox"/> Other _____    |   |

3. Do you use the Internet to supplement your teaching resources? YES or NO  
If yes, what information do you typically use? Check all that apply.

- |   |                                      |
|---|--------------------------------------|
| <input type="checkbox"/> Science            | <input type="checkbox"/> History     |
| <input type="checkbox"/> Math               | <input type="checkbox"/> Art/Music   |
| <input type="checkbox"/> Environment/Energy | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Social Studies     |                                      |

List sites that you frequently use for teaching resources.

<u>Name</u>	<u>URL</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

4. Do you or your students use the Internet in your classroom? YES or NO

If yes, what websites or tools do they use (be general or specific).

<u>Site Name</u>	<u>URL</u>
_____	_____
_____	_____
_____	_____

5. How often do you use the Internet?

- |  |  |
|--|--|
| <input type="checkbox"/> 1 time/week     | <input type="checkbox"/> 2-3 times/week          |
| <input type="checkbox"/> 4-10 times/week | <input type="checkbox"/> more than 10 times/week |

6. What features are important to you when using a web-site? Check four most important to you.

- |   |  |
|---|--|
| <input type="checkbox"/> Loads quickly          | <input type="checkbox"/> Updated frequently      |
| <input type="checkbox"/> Quality of information | <input type="checkbox"/> List of related links   |
| <input type="checkbox"/> Searching capabilities | <input type="checkbox"/> Quantity of information |
| <input type="checkbox"/> Animation/sound/video  | <input type="checkbox"/> Layout and ease of use  |
| <input type="checkbox"/> Content                | <input type="checkbox"/> Photographs             |
| <input type="checkbox"/> Graphics               |  |

7. Please list particular websites that in your opinion stand out as good examples of educational websites?

<u>Site Name</u>	<u>URL</u>
_____	_____
_____	_____
_____	_____

8. What education items would you expect or like to see on an environment/energy website?

- |   |  |
|---|--|
| <input type="checkbox"/> Games            | <input type="checkbox"/> Animation/sound/video |
| <input type="checkbox"/> References       | <input type="checkbox"/> Related links         |
| <input type="checkbox"/> E-mail Questions | <input type="checkbox"/> Chat with Scientist   |

Please list any others.

9. What type of equipment are you using to access the internet? Please check all that applies in each column. If you are unsure, do not check anything in that column.

<u>Computer</u>	<u>Speed (Mhz)</u>	<u>RAM (Mbytes)</u>	<u>Connection</u>
<input type="checkbox"/> 386	<input type="checkbox"/> 33	<input type="checkbox"/> 4	<input type="checkbox"/> T1
<input type="checkbox"/> 486	<input type="checkbox"/> 75	<input type="checkbox"/> 8	<input type="checkbox"/> T3
<input type="checkbox"/> Pentium	<input type="checkbox"/> 100	<input type="checkbox"/> 16	<input type="checkbox"/> 14.4
<input type="checkbox"/> MAC	<input type="checkbox"/> 120	<input type="checkbox"/> 24	<input type="checkbox"/> 28.8
<input type="checkbox"/> UNIX	<input type="checkbox"/> 133	<input type="checkbox"/> 32	<input type="checkbox"/> 33.6
Other: _____	<input type="checkbox"/> 200	<input type="checkbox"/> 64	<input type="checkbox"/> 56
	<input type="checkbox"/> >200	<input type="checkbox"/> 128	
		<input type="checkbox"/> >128	

10. Would you or your students be willing to serve as a beta tester for a new environment/energy website? YES or NO.



## Appendix B: Web Resources Used by Teachers

ACS

Bill Nye - [www.pbs.org/whatson/199](http://www.pbs.org/whatson/199)

Chem Cool

Chemistry Matters

Eisenhower National Clearing House

English teacher web site - [www.mlc](http://www.mlc)

EZ Find at River - [www.theriver.co](http://www.theriver.co)

Frank Potter Science

Interactions with energy - [www.cem](http://www.cem)

Interdisciplinary lesson plans link

NASA - Earth/moon views

NASA

NASA

NASA

National Wildlife Federation

Nationalgeographic.com

Netscape

NSTA - [www.nsta.com](http://www.nsta.com)

PA Weather Page

PA DEP

Ranger Rick

Scholastic

Silver Burdette

[www.channelone.com](http://www.channelone.com)

USA Onramp - [www.lessonsplans.com](http://www.lessonsplans.com)

Yahoo - [www.yahoo.com](http://www.yahoo.com)

Yahooligans

## Appendix C: Webpages/Tools Used in the Classroom

Altavista - to search	Yahooligans
Chem Matters Internet Scavenger Hunt	Yahooligans
CNN News - <a href="http://www.cnn.com">www.cnn.com</a>	
<a href="http://cnn.com">cnn.com</a>	
Contact	
Discovery	
e-mail	
e-mail	
Encarta Schoolhouse -	
<a href="http://Encarta.msn.com/schoolhouse/default.asp">Encarta.msn.com/schoolhouse/default.asp</a>	
EZ Find at River - <a href="http://www.theriver.com">www.theriver.com</a>	
Kids Web -	
Kids World 2000 -	
Microsoft Explorer	
NASA	
NASA - nine planets	
NASA	
NASA - <a href="http://www.nasa.gov">www.nasa.gov</a>	
National Wildlife	
National Wildlife Federation	
National Geographic	
NetScape Gold	
news	
<a href="#">orldindex.html</a>	
PBS	
science sites	
<a href="#">search.com</a>	
Surfing the Net with Kids -	
The Supersite for Kids -	
<a href="#">usatoday.com</a>	
Weather channel - <a href="#">weather.com</a>	
Weather Channel -	
Weekly Reader -	
White House - <a href="http://www.whitehouse.gov">www.whitehouse.gov</a>	
WV Websites (various)	
WWW	
<a href="#">www.bonus.com</a>	
<a href="#">www.ecst.csuchico.edu/~bigkid/kidsw</a>	
<a href="#">www.electriciti.com/feldman</a>	
<a href="#">www.npac.syr.edu/textbook/kidsweb</a>	
<a href="#">www.weather.com/weather</a>	
<a href="#">www.weeklyreader.com</a>	
Yahoo - to search	

#### Appendix D: List of Good Examples of Educational Sites

Adventure On Line - [www.adventureonline.com](http://www.adventureonline.com)  
C++ FAQs - Marshall Kline  
Channel One News - [www.channelone.com](http://www.channelone.com)  
Channel One News - [www.channelone.com](http://www.channelone.com)  
Classroom connect - [www.classroom.net](http://www.classroom.net)  
Classroom of the Future - [www.cotf.com](http://www.cotf.com) Discovery Channel - [www.discovery.com](http://www.discovery.com)  
Discovery Channel - [www.discovery.com](http://www.discovery.com)  
English teacher web site - [www.mlckew.edu.au/English](http://www.mlckew.edu.au/English)  
Homework Hotline  
Interactions with Energy  
[mhs.history.com](http://mhs.history.com)  
Musical Meteorology - [www.nwlink.com/~wxdude/guide.html](http://www.nwlink.com/~wxdude/guide.html)  
NASA  
NASA (GUAR/JPL/Hubble)  
NASA site  
NASA  
National Geographic  
[nationalgeographic.com](http://nationalgeographic.com)  
Netscape  
NSTA - [www.nsta.com](http://www.nsta.com)  
Online English Grammer - [www.edunet.com/english/grammar/index.html](http://www.edunet.com/english/grammar/index.html)  
Online Class (Internet Projects) - [www.onlineclass.com](http://www.onlineclass.com)  
PA DEP Site  
Pitsco's Ask An Expert - [www.askanexpert.com/askanexpert](http://www.askanexpert.com/askanexpert)  
Scholastic  
Teacher Educators Network - [www.exploratorium.edu/isen/ten](http://www.exploratorium.edu/isen/ten)  
The Nine Planets - [www.seds.org/billa/tnp](http://www.seds.org/billa/tnp)  
  
The Day in History - [www.historychannel.com/historychannel/thisday](http://www.historychannel.com/historychannel/thisday)  
US Department of Environmental Resources  
Virtual Science Fair  
Weekly Reader - [www.weeklyreader.com](http://www.weeklyreader.com)  
[www.billnye.com](http://www.billnye.com)  
[www.channelone.com](http://www.channelone.com)  
[www.weeklyreader.com](http://www.weeklyreader.com)  
Yahoo  
Yahooligans  
Yuckiest Site on the Internet - [www.nj.com/yucky/worm](http://www.nj.com/yucky/worm)